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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/842,124	04/26/2001	Atsushi Okuyama	35.C15505	6742

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EXAMINER

KOVAL, MELISSA J

ART UNIT	PAPER NUMBER
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2851

DATE MAILED: 11/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/842,124

Applicant(s)

OKUYAMA ET AL.

Examiner

Melissa J Koval

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 5, 6 and 14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 7-13 and 15-20 is/are rejected.
- 7) ☒ Claim(s) 3 and 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2&6.

- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of claims 1-4, 7-13 and 15-20 directed to Embodiment I, Figures 1-4 in Paper No. 8 is acknowledged. The traversal is on the ground(s) that, in Applicant's view only, the various embodiments of the invention are closely related and would not require a divergent search so as to overburden the Examiner, and furthermore that neither the PTO or Applicant's should be put to the trouble and expense entailed in multiple filing and prosecution. This is not found persuasive because claim 5 introduces "a microlens group" that clearly requires a search beyond the scope of the projection art and claims 6 and 14 introduce a "directional element" that requires a very broad search as well. Therefore, claims 5, 6 and 14 have not been addressed on the merits in this Office Action.

The requirement is still deemed proper and is therefore made FINAL.

Claims 5, 6 and 14 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 8.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Reference numerals I0 and I1 mentioned in the last two lines of page 14 of the specification are not shown. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the I1/I0 ratio set forth in claims 7 and 15 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because the abstract exceeds 150 words. Correction is required. See MPEP § 608.01(b).

The disclosure is objected to because of the following informalities: On the last two lines of page 14 of the specification, it is not clear where in the drawings both reference numerals I0 and I1 are shown.

Appropriate correction is required.

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is

requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-4, 7-9, 12, 13, 15, 18 are objected to under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 1, in lines 13 and 14, the phrase "a secondary light source generating part generating a secondary light source" is deemed to be redundant. Also in claim 1, the phrases "illumination light" and "illumination light other than illumination light" are used. Therefore when the word "among" is used in line 19, it seems that "illumination light other than illumination light" is guided to be among the illumination light and emitted, and it is really not clear what the applicant is trying to claim. Claims 12, 13 and 19 are rejected for the same reasons already applied to rejected claim 1.

In claim 2, line 5, the phrase should be -- totally reflects -- instead of "totally reflect".

With respect to claims 7 and 15, the phrase "and/or" is vague and indefinite because it suggests two different embodiments in the same claim.

Although claim 18 has been treated on the merits, however, the Examiner suggests re-wording claim 18 to read -- any one of claims 1 or 10 --.

Clarification is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 7-13, and 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki.

Refer to Figure 3, for example.

Claim 1 sets forth: "An image display apparatus comprising:

a light source for supplying illumination light;

a reflection type display device which reflects the illumination light and modulates the illumination light into image light;

an illumination optical system for guiding the illumination light to the reflection type display device;

a first optical member for directing the illumination light toward the reflection type display device;

a second optical member including a secondary light source generating part generating a secondary light source with the illumination light emitted from said light source and a reflecting surface which guides illumination light other than illumination light directly incident on the secondary light source generating part among the illumination light emitted from said light source, to the secondary light source generating

part, and from which the illumination light from the secondary light source emerges toward the first optical member; and

a projection optical system for guiding the image light to an observer".

Yamazaki teaches a device having all of the elements set forth in claim 1, including first and second optical systems 101 and 102 having a variety of reflecting surfaces as shown in Figure 3, wherein CCD 3 reflects light, while LCD 2 is transmissive, and optical system 103 guides and projects light. Therefore Yamazaki teaches all of the elements set forth in claim 1, except for a reflection type display device. Both transmissive and reflective LCD devices are well known in the art. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize either type of LCD depending on the arrangement of parts in the device. Yamazaki's device is very compact, however one having ordinary skill in the art would be motivated to rearrange existing elements comprising the device to accommodate a reflective LCD for directing the light from the light source to accommodate a less compact device, also having less height, for example. It has been determined that the rearrangement of parts requires ordinary skill in the art.

With respect to claim 2, optical path separator 4 of Yamazaki acts as a third surface.

As far as the claim language can be understood, claim 7 is met for the reasons already applied to claim 1. Furthermore refer to the polarizing plate PP shown in Figure 3.

With respect to claim 8, refer to the Embodiment shown in Figure 4 of Yamazaki wherein multiple polarizing means are used.

With respect to claim 9, refer to column 7, lines 8 through 22.

Claims 10, 12, 13, 19 and 20 are rejected for the same reasons already applied to rejected claim 1.

Claim 11 is rejected for the same reasons already applied to rejected claim 2.

Claim 15 is rejected for the same reasons already applied to rejected claim 7.

Claim 16 is rejected for the same reasons already applied to rejected claim 8.

Claim 17 is rejected for the same reasons already applied to rejected claim 9.

Claim 18 is implied by the reference of Yamazaki, because image information must be supplied to LCD 2 in order for the remainder of the device to function.

Allowable Subject Matter

Claims 3 and 4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art neither shows nor suggests a secondary light source means comprising a diffusing surface.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Togino et al. U.S. Patent 6,396,639 B1 teach a viewing optical system and image display apparatus using the same.

Danziger et al. U.S. Patent 6,369,948 B2 teaches a multilevel diffractive optical element.

Danziger et al. U.S. Patent 6,292,297 B1 teaches a multilevel diffractive optical element.

Kuramochi et al. U.S. Patent Application Publication US 2002/0018185 A1 teaches an image display apparatus and optical system.

Ohtaka et al. U.S. Patent Application Publication US 2002/0021498 A1 teaches an image display apparatus and optical system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa J Koval whose telephone number is (703) 308-4801. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russell Adams can be reached on Monday through Thursday at (703) 308-2847. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Application/Control Number: 09/842,124
Art Unit: 2851

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MJK
November 11, 2002

A handwritten signature in black ink, appearing to read "Russell Adams", written in a cursive style.

RUSSELL ADAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800